

Message Text

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C O N F I D E N T I A L STATE 287135

E.O. 11652: GDS

TAGS: NATO, MARR, ETEL

SUBJECT:NICS SYSTEM ARCHITECTURE

REF: USNATO 10320

1. PLEASE PROVIDE THE FOLLOWING COMMENTS TO NICSMA:

A. NICSMA D/76: SECURITY AND SURVIVABILITY RECEIVE
RELATIVELY LOW PRIORITY. A STRONGER ARTICULATION
OF THE SECURITY THREAT AND THE PHYSICAL/EW VULNERA-
BILITY OF THE NICS WITH OUTLINES OF ALTERNATIVES
(AND THEIR RELATED COSTS) WOULD PROVIDE NATO AND
NATIONAL DECISION MAKERS A VIEW OF THE SECURITY AND
SURVIVABILITY ASPECTS OF NICS ENHANCEMENT PROPOSALS.
DECISION IMPACTS ON SECURITY AND SURVIVABILITY WOULD
THEN BE MORE EASILY IDENTIFIABLE.

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B. NICSMA/SPED/LPB(77)301/151:

(1) INTEROPERABILITY OF NICS AND NATIONAL SYSTEMS
SHOULD BE INCLUDED PER DPC/D (73/22) DATED 8 OCTOBER
1973 WHICH STATED, AMONG OTHER THINGS, THAT QUOTE IN
MEETING REQUIREMENTS IN THE MOST COST EFFECTIVE

MANNER, DETERMINATION WILL BE MADE WHETHER EXISTING NATO-OWNED OR NON-NATO-OWNED CIVIL AND MILITARY FACILITIES CAN SATISFY THE NEED OR WHETHER NEW FACILITIES WILL BE REQUIRED. UNQUOTE. WHILE EMPHASIZING THE IMPORTANCE OF NICS/TACTICAL SYSTEMS INTEROPERABILITY, THE STC REPORT LARGELY IGNORES THE ARCHITECTURAL/TRANSITION IMPLICATIONS OF THE NICS INTERFACING OR USING NATIONAL STRATEGIC SYSTEMS AS A COST EFFECTIVE MEANS OF ENHANCING NICS SURVIVABILITY AND FLEXIBILITY. THE SEVERAL NATIONAL MILITARY SYSTEMS AVAILABLE FOR POTENTIAL INTEROPERATION WITH THE NICS SHOULD BE ADDRESSED EARLY IN THE PLANNING STAGES. THE ONGOING EFFORT IN THE JCEWG TO DRAFT A NATO POLICY ON INTER-CONNECTION OF NATO AND NATIONAL SYSTEMS SHOULD ALLOW THIS RECOMMENDED COURSE OF ACTION TO PROCEED.

(2) THE STC REPORT TAKES AN OVERLY CONSERVATIVE APPROACH TO THE INTRODUCTION OF DIGITAL TRANSMISSION IN THE NICS. IN PARTICULAR, IT IGNORES OR CONFUSES THE EVOLUTIONARY LEVERAGE WHICH COULD BE PROVIDED BY MULTI-CHANNEL PCM APPLICATION (WITH CONVENTIONAL ANALOG CHANNEL INTERFACES TO PTT AND OTHER NON-DIGITAL FACILITIES). DIGITAL TRANSMISSION TECHNOLOGY ON MICROWAVE AND TROPOSCATTER RADIO
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LINKS HAS DEMONSTRATED SYSTEM BENEFITS AND IS ECONOMICALLY COMPETITIVE WITH ANALOG TRANSMISSION MEANS. NATO SHOULD FOLLOW A POLICY THAT FUTURE UPGRADE OF NATO-OWNED RADIO SYSTEMS, SUCH AS ACE HIGH, WILL EMPLOY DIGITAL TECHNIQUES EXCEPT WHERE A SEVERE PENALTY WOULD BE INCURRED. ANALOG REFURBISHMENT OF THE ACE HIGH SYSTEM, AS RECOMMENDED BY THE STC REPORT, WILL DELAY UNNECESSARILY THE INTRODUCTION OF BULK ENCRYPTION AND THE TRANSITION TO A DIGITAL NICS.

(3) A COMMUNICATIONS SYSTEM AS COMPLEX AS THE NICS WILL REQUIRE EXTENSIVE OPERATIONAL DIRECTION AND MANAGEMENT CONTROL. THE STC REPORT DEVOTES LITTLE ATTENTION TO THIS IMPORTANT AREA. IT IS ESSENTIAL THAT SYSTEM CONTROL REQUIREMENTS BE CONSIDERED IN THE ARCHITECTURAL AND FOLLOW-ON SYSTEM ENGINEERING AND PLANNING OF THE NICS EVOLUTION. THE RESPONSIVENESS OF THE NICS, INCLUDING ITS SURVIVABILITY, IS BELIEVED TO BE CLOSELY INTERTWINED WITH SYSTEM CONTROL CAPABILITIES. SYSTEM CONTROL, THEREFORE, DESERVES CONSIDERABLE EMPHASIS IN THE ARCHITECTURE.

(4) THE STC REPORT INDICATES THAT TRANSPORTABLE SWITCHING CENTERS ARE ASSUMED TO BE ACQUIRED IN THE LAST STAGES OF THE EVOLUTION TO A FULLY DIGITAL NICS. THE AVAILABLE TECHNOLOGY MAY ENABLE ALL THE DIGITAL SWITCHES TO BE READILY TRANSPORTABLE/RECOVERABLE. THE NEED FOR ADDITIONAL READILY TRANSPORTABLE/RECOVERABLE SWITCHES SHOULD BE FURTHER EXPLORED.

(5) AN ANALYSIS OF A NEW TROPOSCATTER MODEM WITH A BIT RATE REDUCTION DEVICE (PERMITTING MORE THAN 120 CHANNELS IN AN ALLOTTED 2MHZ OF RF BANDWIDTH) IS BEING FORWARDED SEPARATELY.
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